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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/612,313	07/02/2003	Dennis A. Kramer	9501-72760	4079
23643	7590	12/22/2005	EXAMINER	
BARNES & THORNBURG 11 SOUTH MERIDIAN INDIANAPOLIS, IN 46204			HANDAL, KAITY V	
			ART UNIT	PAPER NUMBER
			1764	

DATE MAILED: 12/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/612,313

Applicant(s)

KRAMER ET AL.

Examiner

Kaity Handal

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 1-8 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 9-19 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☒ Claim(s) 1-19 are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 11/3/03, 9/21/04, 10/31/2003
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 9-19, drawn to apparatus, classified in class 422, subclass 198.
- II. Claims 1-8, drawn to method, classified in class 48, subclass 131.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process and apparatus for its practice. The inventions are distinct if it can be shown that either: (1) the process as claimed can be practiced by another materially different apparatus or by hand, or (2) the apparatus as claimed can be used to practice another and materially different process. (MPEP § 806.05(e)). In this case, the process as claimed can be practiced by another materially different apparatus, on which does not require a compressor.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I, restriction for examination purposes as indicated is proper.

2. During a telephone conversation with Mr. Kevin Bailey on 12/15/05 a provisional election was made without traverse to prosecute the invention of Group I, claims 9-19. Affirmation of this election must be made by applicant in replying to this Office action.

Art Unit: 1764

Claims 1-8 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

3. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

4. The disclosure is objected to because of the following informalities: Page 8, line 10 the reference number (54) needs to be replaced with reference number (26). Page 9, line 5 the reference number (24) needs to be replaced with reference number (52)

Appropriate correction is required.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Art Unit: 1764

6. Claims 9, 12, 14, 17, and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Hsu (US 2003/0012997 A1).

With respect to claim 9, Hsu teaches a fuel reforming system (fig. 1), comprising: a turbocharger having a turbine (80) with a reformat gas inlet/fluidly connected to fuel cell exhaust (79), and a compressor (76) with a pressurized air outlet (illustrated by arrow from compressor (76) extending to pressure vessel (77)), and a fuel reformer (68) having an air inlet/via air pre-heater (69) fluidly coupled to the pressurized air outlet of the compressor (illustrated by arrow from compressor (76) extending to pressure vessel (77)), and a reformat gas outlet/(fluidly connected to fuel cell (72)) fluidly coupled to the reformat gas/fuel cell exhaust (79) inlet of the turbine (80) (as illustrated) (page 3, paragraph [0034]).

With respect to claims 14, Hsu teaches a fuel reforming system comprising: an expander/gas turbine (80) having a reformat gas inlet/fluidly connected to fuel cell exhaust (79), a compressor (76) mechanically coupled to the expander/gas turbine (80) (illustrated), the compressor (76) having a pressurized air outlet (illustrated by arrow from compressor (76) extending to pressure vessel (77)), and a fuel reformer (68) having an air inlet fluidly coupled to the pressurized air outlet of the compressor (illustrated by arrow from compressor (76) extending to pressure vessel (77)), and a reformat gas outlet /(fluidly connected to fuel cell (72)) fluidly coupled to the reformat gas/fuel cell exhaust (79) inlet of the expander/turbine (80) (page 3, paragraph [0034]).

Art Unit: 1764

With respect to claim 12, Hsu teaches wherein (system) further comprises an electrical generator (84) having an input coupled to an output of the turbine (80) (as illustrated).

With respect to claim 17, Hsu teaches wherein system further comprises an electrical generator (84) having an input mechanically coupled to an output of the expander/turbine (80).

With respect to claims 19, Hsu teaches wherein the expander (80) is a turbine (80) (page 3, paragraph [0034]).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 10 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (US 2003/0012997 A1), as applied to claims 9 and 14 above, and further in view of Surma (US 6,630,113 B1).

With respect to claims 10 and 15, Hsu discloses all claim limitations as set forth above but fails to show wherein the expander has a reformat gas outlet fluidly coupled to an intake of an internal combustion engine. Surma teaches a waste treatment system which comprises partial oxidation reformer (col. 62, lines 18-22) a compressor (fig. 1, 46) and an expander/turbine (52) where the latter has a gas outlet fluidly coupled to an intake of an internal combustion engine in order to generate electricity (col. 3, lines 32-35).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include an internal combustion engine fluidly connected to the gas outlet of the expander/turbine in Hsu's energy system, as taught by Surma, in order to generate electricity.

9. Claims 11, 13, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (US 2003/0012997 A1), as applied to claims 9 and 14 above, and further in view of Bromberg et al. (US 2002/0194835 A1)

With respect to claims 11 and 16, Hsu discloses all claim limitations as set forth above but fails to show wherein the expander has a reformat gas outlet fluidly coupled to an emission abatement device. Bromberg teaches an emission abatement system which comprises a plasma fuel converter (fig. 5, 12), providing hydrogen to expander/turbine (26) which has a gas outlet (illustrated) fluidly coupled to an emission abatement device/absorber catalyst (32) which is adapted to treat NO_x in order to trap NO_x present in the exhaust (page 2, paragraph [0017], lines 1-8).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include an emission abatement device coupled to the expander/turbine gas outlet in Hsu's energy system, as taught by Bromberg, in order to trap NO_x present in the exhaust.

With respect to claims 13 and 18, Hsu discloses all claim limitations as set forth above but fails to show wherein the fuel reformer comprises a plasma fuel reformer. Bromberg teaches wherein fuel reformer comprises a plasma fuel reformer/converter (12) in order to readily transform fuel into hydrogen gas and have an instantaneous turn-on and response in a very compact unit (page 3, paragraph [0028], lines 4-6).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to include a plasma fuel reformer in the Hsu's energy system, as taught by Bromberg, in order to readily transform fuel into hydrogen gas and have an instantaneous turn-on and response in a very compact unit.

Conclusion

Art Unit: 1764


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaity Handal whose telephone number is (571) 272-8520. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

KH

12/19/2005


ALEXA DOROSHENK NECKEL
PRIMARY EXAMINER